

Docket No.: 285453US0PCT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

GROUP: 1765

Jonas SCHERBLE, et al.

SERIAL NO: 10/577,815

EXAMINER: LENIHAN

FILED: April 28, 2006

FOR: THERMOSTABLE MICROPOROUS POLYMETHACRYLIMIDE FOAMS

DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

Sir:

Now comes Dr. Jonas Scherble who deposes and states that:

1. I am a graduate of University of Freiburg, Germany and received my Doctor degree in the year 2000.
2. I have been employed by Roehm GmbH (today: Evonik Roehm GmbH) for 9 years as a Chemist (in 2003) in the field of Research and Development of Rohacell rigid foam.
3. The following experiments were carried out by me or under my direct supervision and control.
4. The following Examples B1 and B2 according to the present invention were prepared. In addition, Comparative Example A1 was prepared.

5. Experiments

The experiments were carried out corresponding to the examples 1-7 of the above-identified patent application.

The amounts given in table 1 of methacrylic acid (MAA), methacrylonitrile (MAN), tert-butanol (tert-BuOH), allyl methacrylate (AMA) and tert-butyl methacrylate (tBMA), and also in each case 0.2 part by weight of MgO, 0.040 part by weight of tert-butyl perpivalate, 0.036 part by weight of tert-butyl 2-ethylperhexanoate, 0.10 part by weight of tert-butyl

perbenzoate, 0.103 part by weight of cumyl pemeodecanoate, 0.005 part by weight of benzoquinone and 0.16 part by weight of PAT 1037 (supplied by: E. und P. Würtz GmbH & Co. KG, Industriegebiet, In der Weide 13+18, 55411 Bingen, Sponsheim) as release agent were carefully mixed. The mixture was polymerized for 48 hours in a cell of thickness 23 mm and then subjected to 3 hours of a temperature programme extending from 40°C to 115°C. The polymers of A1 and B1 were foamed in a convection oven for 1h at 200 °C and for additional 2h at 220 °C.

The composition of B2 was foamed in two different ways (first and second foaming program) under the conditions given in table 3.

Table 1

Example	MAA pbw	MAN pbw	tBMA pbw	tert-BuOH pbw	AMA pbw
A1	44.0	50.0	10.0	2.0	0.170
B1	50.0	50.0	1.0	7.5	0.170
B2	49.0	50.0	2.0	7.0	0.100

Analogous to the above-identified application the compressive strength was measured according to DIN 53452, the heat resistance according to DIN 53424 and the creep according to DIN 53425, ASTM D 621 and D2990.

6. Results

Examples B1 and B2 (first foaming program) show increased mechanical properties (compressive strength or heat resistance) having amounts of tert-butyl methacrylate in the range of Claim 1 of the present invention (0.01 to 4.99 parts by weight) compared to Comparative Example A1 with a very high amount of tert-butyl methacrylate (10 % by wt). All examples are in such a manner formulated and foamed that the materials show comparative densities.

Table 2: Mechanical properties

Example	Density [kg/m ³]	Compressive strength [MPa]	Heat resistance [°C]	Creep [%] (compression at 0,2N/mm ² , 125°C, 2h)
A1	67,75	1,807	212 / 220 / 214 / 215 (1 + 2 twice foamed 3 + 4 deformed)	0,05 (65,3 kg/m ³)
B1	69,05	2,130	224 / 230 / 229 / 226 all samples twice foamed	-0,15 (65,9 kg/m ³)

Table 3

	B2			
Foaming temperatures	1h 200°	2h 220°	1h 200 °	2h 229°
Density [kg/m ³]	64,84		49,16	
Compressive strength [MPa] at 180°C	0,82		0,53	

7. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

8. Further deponent saith not.

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Signature: Jonas Schulte
Date: 07-12-2011